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## **The illusion of choice: Evidence from Barcelona**

**Caterina Calsamiglia, Maia Güell** 07 October 2014

The Boston mechanism for school assignment is well studied and widely used. This column shows two crucial failings of the variation that gives priority based on neighbourhood, using an exogenous policy change in Barcelona. Since assignment to any school not picked first is unlikely, most parents make the ‘safe’ pick and rank the local school first. Moreover, the ability to deviate from the ‘safe’ ranking is greater for richer families, for whom private education is a viable outside option.

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In the last two decades more than two-thirds of OECD countries have augmented families' capacity to choose schools for their children beyond those closest to their homes (Musset 2012). The aims of school choice are to improve

- The matching between children and schools; and
- Students' educational outcomes.

At the same time, there are equity concerns around school choice – as disadvantaged families may be less able to exercise choice.

Generally, parents are asked to submit a list with their ranking of schools, and then a set of rules determines the final allocation – the so-called school choice mechanisms. One of the most widely used procedures in school choice is the Boston mechanism (see Abdulkadiroglu 2013 for a review). This mechanism assigns all applicants to the school ranked first, and if there is overdemand for a school, ties are resolved according to priorities. These priorities can be defined through a random lottery or according to criteria such as distance to the school, existence of siblings in the school, or other socioeconomic variables. Those rejected from their school ranked first can opt for the seats that remain free only after considering everyone's school ranked first. This process drastically reduces the chances of being accepted in any particular school after being rejected from one's school ranked first. This may lead families to avoid overdemanded schools, to avoid rejection from those schools. Priorities for residence may seem innocuous, but they can have a large impact on parents' behaviour. They may lead families to perceive that the schools for which they have highest priority are safer.

## Recent research

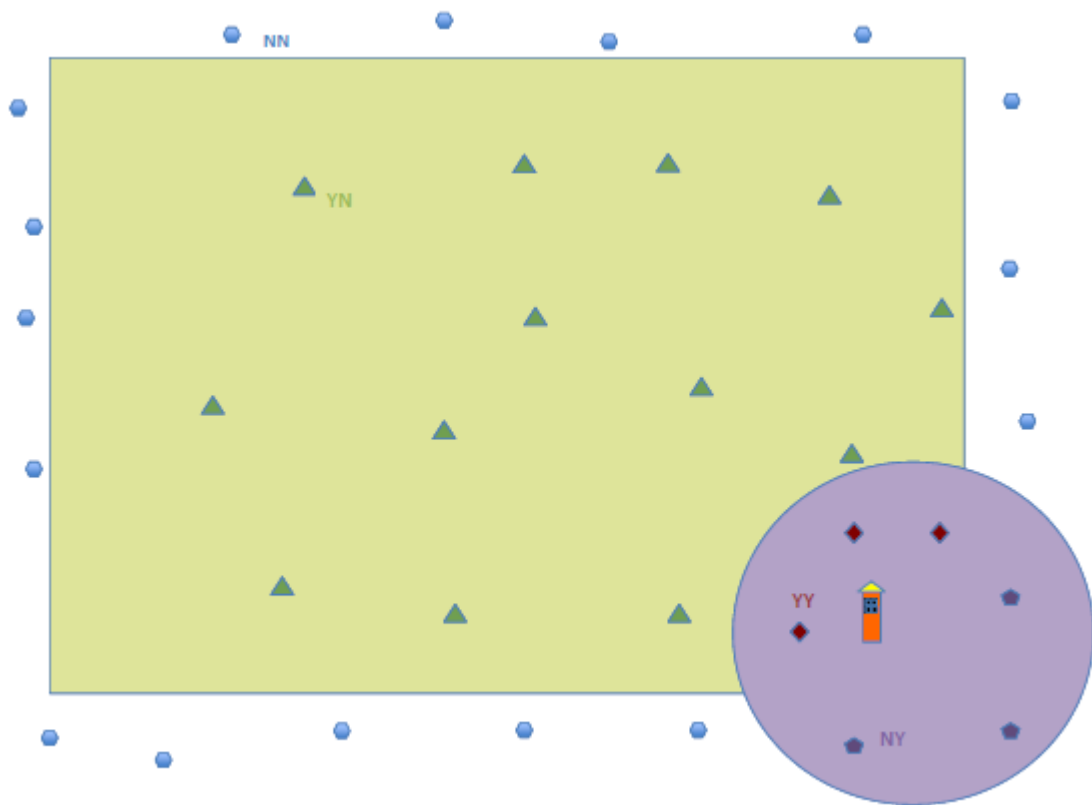
In Calsamiglia and Güell (2014) we exploit a very rich administrative data set that contains all primary school applications in the city of Barcelona, Spain. We observe that in any given year, around 80% of families apply for a neighbourhood school. But by observing parents' choices at a point in time, one cannot identify whether this behaviour results from families' preferences for the neighbourhood schools or from families applying for a safer school. We exploit an unexpected change in the definition of neighbourhood occurring in 2007 to assess whether it is preferences or safety that drives parents' school choice. The set of schools for which a family has priority changed exogenously with this new definition of neighbourhood. Our key insight is that if parents choose according to their preferences, then a change in neighbourhood definition should not systematically change their choices. Instead, if parents are playing it safe, then a change in neighbourhood definition may affect their choices.

We focus on families' schools ranked first and find that after the change in neighbourhood definition, families avoid applying for the old neighbourhood schools and apply to the new neighbourhood schools. In order to illustrate these changes we classify schools for each family as follows:

- Yes-Yes Schools (YY): present in the old neighbourhood and in the new neighbourhood.
- Yes-No Schools (YN): present in the old neighbourhood but not in the new neighbourhood.
- No-Yes Schools (NY): not present in the old neighbourhood but present in the new neighbourhood.
- No-No Schools (NN): not present in the old neighbourhood and not present in the new neighbourhood.

The following picture illustrates this classification for a family living at the corner of the old neighbourhood. Diamonds, pentagons, triangles, and hexagons in these graphs represent schools. The (orange) building is a particular family/address. The (green) square represents the old neighbourhood, and the (purple) circle refers to the new neighbourhood.

**Figure 1.** School description for a family living on the corner of the district



If families play it safe, the change in behaviour should be such that they stop ranking first schools that are no longer in their neighbourhood. Consequently, the proportion of families asking for YN schools should decrease between 2006 and 2007, which is exactly what we observe in Table 1. The proportion of families that ask for YN schools fell from 21% to 10% – a decrease in demand of 52%.

Moreover, if families play it safe the change in behaviour should be such that they start ranking first schools that are in their new neighbourhood, because these schools now give

them priority points. Consequently, the proportion of families that ask for NY schools should increase between 2006 and 2007, which is exactly what we observe in Table 1. The proportion of families that ask for NY schools increased from 9% to 17%, which is an increase in demand of 89%. This very large increase indeed suggests that safety, rather than preferences, plays a crucial role in choosing a school.

**Table 1.** Families' first choice over the years

	2005	2006	2007	2008	2009	2010
Percentage of families applying for YN schools	18	21	10	7	8	8
Percentage of families applying for NY schools	10	9	17	18	18	17
Percentage of families applying for YY schools	51	56	63	65	64	65
Percentage of families applying for NN schools	19	13	8	9	10	10

This implies that the gains of school choice – in terms of matching of children to schools – seem limited, because the equilibrium allocation is not very different from that without choice, where children are assigned automatically to their neighbourhood school.

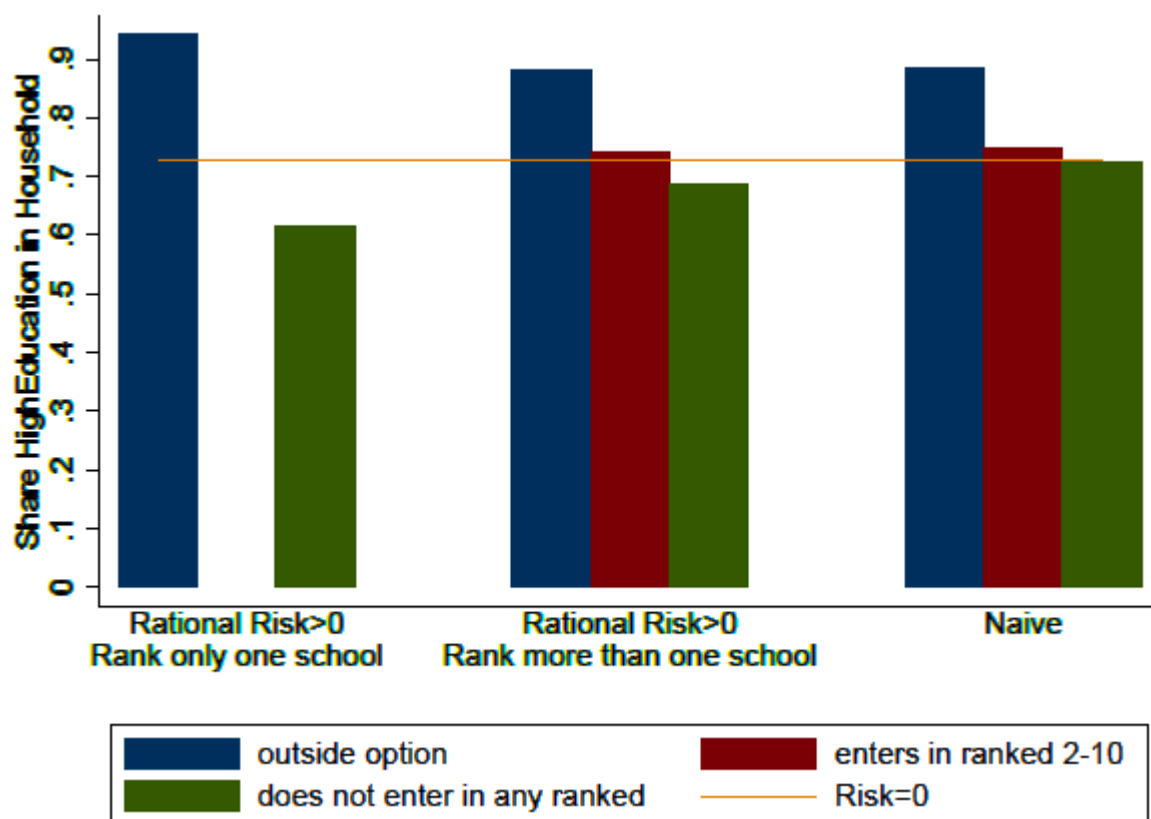
One important concern in the debate regarding the Boston mechanism is that naive parents, being unable to strategise, may be harmed by the system (Pathak and Sönmez 2008). Abdulkadiroglu et al (2006) report that in Boston, 19% of parents seem to be naive, playing a dominated strategy. We find a similar fraction of parents exhibiting seemingly naive behavior in Barcelona. By merging our application data with register data, we can rationalise some of their behaviour. Register data allow us to understand how bad the outcome is for those taking risks in this game. We find that of those who are unlucky and do not get their first-ranked school, 14% of them go to an outside option, mainly private school (although only 4% of schools are private in Barcelona), and around 30% do not get any of the schools that they ranked.

We merged our application dataset with the population census data in order to yield information about parents' socioeconomic characteristics. Having this information allows us to analyse the level of education for these families. Figure 2 shows that those who are particularly harmed by the system – those who do not get any of the schools ranked in their application – have systematically lower levels of education than those applicants who do not take any risk. Similarly, those with higher levels of education can take higher risk and therefore have greater access to the best schools in the city.

## Concluding remarks

Our empirical evidence suggests that under the Boston mechanism, important inequalities emerge, because the mechanism provides those who can afford private school with an outside option that allows them to play a riskier strategy in the public assignment and have a better chance of getting the best schools in the public system.

**Figure 2.** Household education and final outcome



This paper shows that with the Boston mechanism, priorities overtake the role of preferences for most applicants. The risk involved in stating preferences is not worth taking, leading most of the applicants to apply for one of the neighbourhood schools, independently of the identity of those schools. Only the few families who have the option of private school if they are unhappy with their allocation can take the risk of stating their preferences. Those who dare to take risks without having an outside option are particularly harmed by the system – which rationalises why most families do not take risks.

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